

over their depreciation rates (i.e., the price cap carrier option) in CC Docket No. 92-296.¹⁴¹

With the elimination of sharing, changes in depreciation rates are delinked entirely from the process of determining interstate access prices because all ties to cost-based ROR regulation are severed. Prices no longer depend in any way on depreciation expense. Thus, with the elimination of sharing, the price cap LECs should be given the ability to obtain depreciation rates on par with the LECs' competitors.

Carriers should be permitted to change depreciation rates by filing minimal supporting documentation demonstrating that they have used generally accepted and approved depreciation methods. This revision would be consistent with the Commission's declaration in the LEC Price Cap Order that depreciation rate changes are endogenous because they are under the control of the LECs.¹⁴²

All of the LECs' competitors are able to establish and change their depreciation rates to match the economic lives of their assets. LECs must be granted the same treatment because they face similar recovery scenarios regarding their existing and new assets. The LECs must not be burdened with the additional risk caused when the Commission substitutes its view of proper asset lives and administration for that of the companies' management.

B. Proper Price Cap Reform Removes Sharing As A Rationale For Restrictive Affiliate Transactions Rules.

The Commission has recognized that pure price regulation (without earnings sharing) eliminates incentives for carriers to cross-subsidize nonregulated operations, and

¹⁴¹ Simplification of the Depreciation Prescription Process, Report and Order, Docket No. 92-296, released October 20, 1993, paras. 42 and 43.

¹⁴² LEC Price Cap Order, para. 182.

provides strong incentives to reduce costs through increased productivity and efficiency. As with the need to simplify the depreciation filing requirements, there is also as compelling a need to simplify the rules that govern affiliate transactions. Contrary to the suggestions in the Affiliate Transactions NPRM,¹⁴³ where without reason or justification the Commission proposes to implement even more stringent, draconian and costly rules, the Commission should instead simplify those rules.¹⁴⁴ Specifically, the Commission recognized that AT&T has a price cap plan without earnings sharing and, as a result, such a plan:

greatly reduces the incentives that AT&T may have to shift costs between its nonregulated operations and its carrier operations. Since AT&T's price caps are unrelated to AT&T's current costs, attempts by AT&T to manipulate the costs it records for affiliate transactions will not increase AT&T's rates.¹⁴⁵

Thus, elimination of sharing in the LEC plan would facilitate the simplification of asset transfer rules, as well as service cost rules. The ability and incentive to shift costs or cross-subsidize is so diminished that retaining such stringent rules only creates a cost burden to SWBT and its customers without a resultant benefit.

The Commission has already determined that affiliate transactions can improve efficiency and service quality and promote better infrastructure development. The Commission should not thwart achievement of the objectives by imposing unnecessary or burdensome regulation. The elimination of sharing eliminates the perceived need to impose additional

¹⁴³ Affiliate Transactions NPRM, paras. 13-99.

¹⁴⁴ SWBT Comments, CC Docket No. 93-251, filed December 10, 1993, pp. 1-7.

¹⁴⁵ Affiliate Transaction NPRM, para. 10.

restrictive affiliate transactions safeguards for price cap LECs as proposed in CC Docket No. 93-251.¹⁴⁶

C. Universal Service Issues Should Be Reviewed.

A comprehensive examination of universal service issues should be initiated by the Commission. It is clear that the competitive environment requires changes to the manner in which universal service goals have been pursued. These issues must be addressed promptly to ensure a fair and balanced competitive landscape. However, steps can be taken in this proceeding to support universal service objectives. For example, by restructuring the price baskets, aligning regulation according to levels of competition and increasing pricing and structural flexibility, the Commission can create an environment in which the LECs can compete more effectively, thus allowing the marketplace to address many of the universal service goals.

¹⁴⁶ Id., para. 103. See also Comments in CC Docket No. 93-251, filed December 10, 1993, SWBT, p. 6; Ameritech, pp. 7-8; Bell Atlantic, p. 7; BellSouth, pp. 8-9; NYNEX, pp. 10-11; USTA, p. 11.

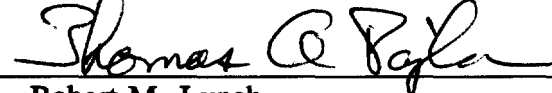
V. CONCLUSION

Oklahoma Governor David Walters, speaking at a telecommunications conference in Tulsa earlier this year said that the key to providing the much-needed infrastructure is reforming the stifling regulation of the telecommunications industry. He stated "We have overcome the politics involved in such decision making. It's good politics to beat up on utilities. The unfortunate result is that beating up on utilities strangles investment in telecommunications."

SWBT respectfully requests that the Commission adopt the changes to LEC price cap regulation detailed here, in order to promote economic growth and national productivity.

Respectfully submitted,

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May 9, 1994

CERTIFICATE OF SERVICE

I, Kelly Brickey, hereby certify that the foregoing "Comments of Southwestern Bell Telephone Company" In the matter of Price Cap Performance Review for Local Exchange Carriers, has been served this 9th day of May, 1994 to the Parties of Record.



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STRATEGIC POLICY RESEARCH

REGULATORY REFORM FOR THE INFORMATION AGE:

PROVIDING THE VISION

JANUARY 11, 1994

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STRATEGIC POLICY RESEARCH

REGULATORY REFORM FOR THE INFORMATION AGE

EXECUTIVE SUMMARY

JANUARY 11, 1994

In recent years, many regulators have realized that rate-of-return regulation is wholly inappropriate for the telecommunications industry. A different approach is needed, as the industry enters the Information Age. The FCC and state regulators have tried many different versions of regulatory reform. Results have generally been successful. Incentive regulation has been an appropriate step in the right direction. Further steps in the same direction could yield much larger public benefits. To reap those benefits, regulators must avoid resting on their laurels by simply fine-tuning existing plans. What is called for are bold *new* steps to further regulatory reform.

This paper presents a vision of where regulation should be 5 years from now. Because of inevitable procedural delays, progress must begin immediately if this goal is to be achieved. The vision provides a compass for evaluating shorter-run reforms. We also suggest some specific short-run reforms that would significantly move regulation in the direction of our long-run vision.

GROWTH IN COMPETITION

Any plan for regulatory reform should anticipate and facilitate changes in the market by providing appropriate regulatory flexibility. Local telecommunications is currently undergoing profound changes that will revolutionize the industry structure. Removal of state and federal regulatory barriers to entry is fueling growth in competition. Technological and policy developments will strengthen the array of competing services. Competing access providers (CAPs), cable and wireless services industries are already thriving and hold excellent prospects for the future.

CAPs have for some time succeeded in bypassing local exchange carriers (LECs) by directly connecting private facilities to long-distance carriers. Now, by taking advantage of new interconnection opportunities, they can offer switched access and local services as well. With their established presence in most major markets and their substantial financial resources, CAPs are poised for large-scale, head-on competition with LECs.

Competition from the cable industry will also intensify in the near future. The number of homes passed and number of homes served by the cable industry have both grown rapidly. Cable now has a large presence in residential areas. Increased use of fiber in cable networks positions the cable industry to provide local exchange services at low incremental cost. The recent spate of proposed mergers and other joint arrangements between LECs and cable companies portends an acceleration of competition jointly by cable companies and out-of-region LECs.

The wireless industry will soon bring a vast new universe of competition to local services. The rapid growth of cellular telephony demonstrates the popularity of mobile communication. Advances in digital technology will allow additional capacity for increased traffic. The FCC has adopted a policy of expediting Personal Communication Service (PCS) deployment, and recently decided to increase the spectrum available for wireless technology by four-fold. These and other developments (e.g., Motorola's sale of spectrum to Nextel) will drive down the price of wireless service and equipment. We expect that within 10 years, wireless services will provide reasonably-priced alternatives to LEC landline services. The entire landscape of the telecommunications industry will be transformed as a result.

In sum, LECs will face increasingly potent competition. Growth of local-services competition is likely to far outpace the early growth of long-distance competition.

EFFICIENCY INCENTIVES

Effective plans for reform also must take into account the incentives for efficiency under different regulatory scenarios. Under traditional rate of return regulation, the company is allowed an opportunity to earn a "fair" return on operations. While providing some benefits, this method of regulation significantly dilutes the firm's incentives to be efficient. Increased efficiency often requires difficult changes in established business and personnel patterns. Without a sufficient financial incentive, such changes are unlikely to be made. Our measurements indicate that rate-of-return regulation (with a one-year lag) affords only a small percentage (about 14 percent) of the efficiency incentives that exist in unregulated competitive markets. Greater incentives can be provided through alternative regulatory approaches.

Price Regulation

Current Price Caps. Direct price regulation is one alternative approach to rate-of-return regulation. Price regulation plans currently in operation typically last only 3 to 5 years. The aggregate price level (for services not subject to streamlined regulation) is limited by a price freeze or a predetermined formula. The allowable price level changes each year, in accordance with the formula. However, the formula itself does not change during the term of the plan. Price-regulation plans benefit customers through lower rates during the plan's term (*i.e.*, the consumer dividend). However, renegotiations at the end of the plan term substantially dilute efficiency incentives. Moreover, the shorter the term of the plan, the more are incentives diluted. In addition, some current price-cap plans incorporate a sharing mechanism whereby prices are adjusted on the basis of the firm's earnings. Such plans are hybrids between "pure" price caps and rate-of-return regulation. Such mechanisms further dilute incentives and are counterproductive. We estimate that the current FCC hybrid price-cap plan for LECs provides *less than* 35 percent of the efficiency incentives that exist under unregulated competition. Marginal efficiency incentives in the hybrid plan are only about 18 percent for a LEC whose earnings are in the sharing zone each year.

Potential Improvements. While current price-cap and hybrid plans are somewhat better than rate-of-return regulation, substantial further improvement is possible and desirable. There should be no earnings sharing mechanisms, and the term of the plan should be lengthened to 8 to 10 years. Such a term optimizes the trade-off between the higher risk of a long-term plan and the diluted incentives of a short-term plan. Significantly more incentives for efficiency could be preserved with these improvements than under current plans.

Streamlined Regulation in Selected Markets

Streamlined regulation in selected markets is another alternative approach to regulation. Under streamlined regulation, the firm must file tariffs. However, regulators do not (in practice) regulate the firm's prices or earnings. Streamlined regulation provides the full efficiency incentives of competition. Competitive and market pressures are relied upon to limit market power of any firm.

The standard for streamlining regulation in a market should be whether customers who constitute a sizable fraction of demand have reasonable alternatives. This standard is superior to a test of market share, which has limited value as an index of market power, and may create perverse incentives for providers.

Efficiency benefits are maximized when regulation in all appropriate markets is streamlined. To that end, LECs should be allowed to disaggregate services to create additional candidates for streamlining. Discretionary services, including new services that supplement existing services, should be under streamlined regulation. Consumers can check abuse of market power by cutting back purchases of discretionary services if prices are raised

or quality declines. Balancing efficiency incentives versus risk, we estimate that the pricing formula (for services not subject to streamlined regulation) should be renegotiated, if necessary, every 8 to 10 years.

Some LEC markets (*e.g.*, special access in some markets, primarily in large metropolitan areas) should already be deregulated or subject to streamlined regulation. Regulation of much of the transport market should be streamlined shortly after collocation is implemented. Over the next several years, as competition becomes much more intense, deregulation or streamlined regulation should apply to a sizable portion of LEC revenues.

IMPACTS OF INEFFICIENT PRICING

Future regulatory policy should mitigate the perverse effects of inefficient pricing schemes that have been imposed by regulators in the past. These inefficient pricing schemes, while perhaps useful in the past, are currently poor public policy. Their impact will become increasingly counterproductive as competition intensifies during the next decade.

Inefficient pricing has been promulgated in two ways. One is through overpricing of long-distance services (including long-distance access) in order to underprice local services. This arrangement was implemented to achieve the goal of universal service. That goal has long been achieved. Consequently, interstate access rates should no longer be burdened with an inappropriately high level of support. Access rate reductions benefit a broad base of consumers as long-distance rates are lowered. Lower long-distance access rates which reflect actual cost of access would stimulate use of long-distance service and benefit consumers. Efficiency improvements would be enormous. Additionally, inefficient pricing has the drawback of encouraging entry of inefficient competitors. Even inefficient competitors can easily undercut access rates that are padded by regulators to include noneconomic costs. Access rates should be restructured before competitors, attracted by current inefficient prices, make sizable investments. However, restructuring should follow a transition plan that is both economically and politically acceptable. That plan should incorporate a mechanism for contributions by competitors toward funding the inefficient pricing regime.

The other form of inefficient pricing is underdepreciation of plant. In high-tech industries, plant value declines rapidly due to rapid obsolescence of high-tech equipment. However, regulators have not allowed telephone companies to depreciate plant in pace with the rapid decline in plant value. As a result, unregulated high-tech firms have much more accelerated depreciation than telephone companies. The problem of underdepreciation has not abated in recent years. On the contrary, it has been exacerbated slightly under current price-cap regimes. Regulators and companies should agree on an accelerated schedule for reducing the regulatory book value of assets as part of a revised price-cap plan. Because the devaluation of assets would reduce reported earnings, regulators would (*ceteris paribus*) need to make concessions elsewhere in the plan.

PRICING FLEXIBILITY

Prices of services not subject to streamlined regulation will presumably have an overall constraint. The LECs' freedom to restructure rates *within* that constraint will affect performance. Additional pricing freedom can yield additional benefits. Because the firm itself is most knowledgeable about actual costs and market conditions, it is best able to set rates efficiently. Recent economic analyses establish that, in the long term, a firm subject only to an overall pricing constraint will tend to price efficiently. However, there may still be a call for some limiting of pricing flexibility. Regulators may want to impose rules to reduce barriers to competitive entry. They may also seek goals other than efficient pricing. For example, regulators may seek moderation of politically sensitive rates, such as for low-income residential customers, even at the expense of economic efficiency.

Price caps can best protect the several public policy goals of regulation by segregating categories of services into relatively few "baskets" which are defined primarily by degree of competition. Each "basket" should be subjected to an appropriate level of regulation. To maximize efficiency, the "baskets" should undergo annual review, to ensure that services are categorized appropriately, as competitive conditions change. Each year, regulation would be streamlined in additional markets, as competition intensifies.

VISION OF FUTURE REGULATION

The preceding analysis leads to our vision of where regulation should be in 5 years:
viz:

1. In markets where customers have reasonable alternatives to the regulated firm's services, the services are deregulated or regulation is streamlined. In those markets, the firm's prices and earnings are not, in practice, regulated. A process is in place for quickly streamlining regulation in additional markets, as competitive alternatives evolve. Within 5 years, many local exchange markets are subject to streamlined regulation or deregulation. Within 10 years, a sizable portion of LEC revenues are subject to streamlined regulation or deregulation.
2. Services not subject to streamlined regulation are governed by price regulation — not traditional rate-of-return regulation. During the term of the plan, the regulated firm's prices are not tied to its earnings. The pricing formula is renegotiated, if necessary, 8 to 10 years in the future.
3. Regulatory policies that promote inefficient pricing have been phased out to the extent possible. Regulators do not attempt to hold long-distance prices artificially high in order to underprice local services. Depreciation policies ensure that the book value of plant approximates its economic value.

4. Regulated firms have substantial flexibility to set individual prices, subject to a few overall constraints. Price-cap constraints limit the overall level of prices.

Policymakers must start now to implement these policies over the next few years if the United States is to be well-positioned to lead the world into the Information Age. If policymakers delay even a few years in getting started — and then face lengthy procedural delays — the required changes will involve substantial dislocations. Unnecessary costs will be incurred, and the nation's technological progress will be retarded.

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	<u>Our Vision of Where Regulation Should Be</u>	2
II.	ASSESSMENT OF COMPETITION	5
A.	<u>Competing Access Providers</u>	5
B.	<u>Cable</u>	7
C.	<u>Wireless Competition</u>	9
D.	<u>Summary of Status/Trends in Local Exchange Competition</u>	11
E.	<u>Implications for Regulation</u>	12
III.	EFFICIENCY INCENTIVES	14
A.	<u>ROR Regulation</u>	14
B.	<u>Measurement of Efficiency Incentives</u>	16
C.	<u>Incentive Regulation</u>	17
1.	Pure Price Regulation	17
2.	Sharing Mechanisms	22
3.	Timing of Consumer Dividend	23
D.	<u>Streamlined Regulation of Selected Services</u>	24
E.	<u>Standard for Noncognizable Market Power</u>	26
F.	<u>Market Segments</u>	29
G.	<u>Discretionary Services</u>	30
IV.	EFFICIENT PRICING	32

A.	<u>Overpricing of Long-Distance Services in Order to Underprice Local Services</u>	32
B.	<u>Underdepreciation of Plant</u>	36
1.	Depreciation Under Price Caps	40
V.	PRICING FLEXIBILITY	42
VI.	CONCLUSIONS	46
A.	<u>Growth in Competition</u>	46
B.	<u>Efficiency Incentives</u>	47
1.	Price Regulation	48
a.	Current price caps	48
b.	Potential improvements	48
2.	Streamlined Regulation in Selected Markets	49
C.	<u>Impacts of Inefficient Pricing</u>	49
D.	<u>Pricing Flexibility</u>	51
E.	<u>Vision of Future Regulation</u>	51
APPENDIX		
MEASUREMENT OF EFFICIENCY INCENTIVES		1

REGULATORY REFORM FOR THE INFORMATION AGE

Strategic Policy Research

I. INTRODUCTION

In recent years, many regulators have realized that traditional rate-of-return (ROR) regulation is wholly inappropriate for the telecommunications industry. A different approach is needed, as the industry enters the Information Age. Unfortunately, the academic literature on regulation has, until the past few years, provided little guidance on alternatives to ROR regulation.¹ Regulators, therefore, had to invent their plans for regulatory reform *de novo*. Many different approaches were used. For example,

- Nebraska largely deregulated telephone service but allows customers to petition for rate reductions.²
- Vermont froze basic residential rates but streamlined regulation of other services.³
- Illinois liberalized competitive entry and granted significant pricing flexibility and dealt with subsidy flow issues.⁴

¹This fact was observed by Richard Schmalensee, "Good Regulatory Regimes," *RAND Journal of Economics* 20 (Autumn 1989): 417-435. The academic literature did, however, provide substantial documentation of the infirmities of ROR regulation. See, for example, H. Averch and L. Johnson, "Behavior of the Firm Under Regulatory Constraint," *American Economic Review*, Vol. 52, December 1962; Ronald R. Braeutigam and John C. Panzar, "Diversification Incentives Under 'Price-Based' and 'Cost-Based' Regulation," Northwestern University, December 1988; Jordan Jay Hillman and Ronald Braeutigam, *Price Level Regulation for Diversified Public Utilities* (Kluwer Academic Publishers: Norwell, Massachusetts), 1989, pp. 9-13; James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utility Rates*, (Public Utilities Reports, Inc.: Arlington, Virginia), March 1988, Chapter 21.

²Nebraska Statute 86-801, effective January 1, 1987.

³The Vermont Telecommunications Agreement was enacted under PSB Docket No. 5293, order entered December 30, 1988; first extended under PSB Docket No. 5526, order entered December 4, 1991; then extended under PSB Docket No. 5614, order entered January 29, 1993.

⁴Enacted under the Universal Telephone Service Protection Law of 1985, Public Act 84-1063.

- The FCC adopted an extremely elaborate form of price-cap regulation.⁵

We now have several years' experience with regulatory reform in many jurisdictions of the United States, as well as abroad. Results have been generally favorable.⁶

It now seems apparent that incentive regulation has been an appropriate step in the right direction. Further steps in the same direction could yield much larger public benefits. To reap those benefits, regulators must avoid resting on their laurels by simply fine-tuning existing plans. What is called for are bold *new* steps to further regulatory reform.

This paper presents a vision of where regulation should be 5 years from now. The vision provides a compass for evaluating shorter-run reforms. We also suggest some specific short-run reforms that would significantly move regulation in the direction of our long-run vision.

A. Our Vision of Where Regulation Should Be

Rapid technological progress will profoundly affect the telecommunications industry during the next decade. Improvements in fiber-optic systems will lower costs and facilitate the offering of video and data services. These improvements will benefit local exchange carriers, fiber-based competitors, and cable television companies. Digital technology will improve the quality and dramatically expand the capacity of wireless telecommunications.

⁵Federal Communications Commission (FCC), *In the Matter of Policy and Rules Concerning Rates for Dominant Carriers*, Special Report and Order, CC Docket No. 87-313, adopted September 19, 1990, released October 4, 1990.

⁶For example, R. Schmalensee and J. H. Rohlfs (*Productivity Gains Resulting from Interstate Price Caps for AT&T*, September 3, 1992) estimated that AT&T price caps resulted in \$1.8 billion of efficiency gains in the first three years and that 90 percent of the benefits went to consumers. The FCC estimated that the AT&T price-cap plan yielded \$1.8 billion to consumers (over four years) [Price Cap Performance Review for AT&T, CC Docket No. 92-134, *Notice of Inquiry*, 7 FCC Rcd 5322 (1992)]. *State Telecommunications Reports* (Vol. 11, No. 4, February 25, 1993) recently estimated that state plans for regulatory reform have yielded \$386 million of rate reductions to consumers and \$151 million of additional earnings for telephone companies. Alan Mathios and Robert P. Rogers showed that certain long-distance rates were significantly lower in states with pricing flexibility than in those with ROR regulation ["The Impact of Alternative Forms of State Regulation of AT&T on Direct Dial Long Distance Telephone Rates," 20 Rand J.Econ 437 (1989)].

Intelligent-network features will meet an ever wider range of customer needs through flexible routing of calls.

During the next decade, competition in the telephone industry is likely to intensify rapidly. Many business and residential customers will have alternatives to services provided by the local telephone company. The telephone network will evolve into a network of networks.

Not surprisingly, traditional regulatory policies, which evolved during the prior lengthy period of Bell-System (and independent telephone companies) monopoly, will be inappropriate — indeed, destructive — in this new environment. This paper analyzes alternative regulatory policies that will work more effectively. They provide sharper efficiency incentives and avoid the perverse consequences often associated with regulated competition. Our analysis of regulatory alternatives leads to our vision of where regulation should be headed in order to deal effectively with the changes that are to come:

1. In markets where customers have reasonable alternatives to the regulated firm's services, services are deregulated or regulation is streamlined. In those markets, the firm's prices and earnings are not, in practice, regulated. A process is in place for quickly streamlining regulation in additional markets, as competitive alternatives evolve. Within 5 years, many local exchange markets are subject to streamlined regulation or deregulation. Within 10 years, a sizable portion of LEC revenues are subject to streamlined regulation or deregulation.
2. Services not subject to streamlined regulation are governed by price regulation — not traditional ROR regulation. During the term of the plan, the regulated firm's prices are not tied to its earnings. The pricing formula is renegotiated, if necessary, 8 to 10 years in the future.

The above policies greatly enhance the incentives of regulated firms to operate efficiently. They also stimulate investment in new technology and the offering of innovative new services. At the same time, they reduce both the incentive and opportunity for cross-subsidy.

3. Regulatory policies that promote inefficient pricing have been phased out to the extent possible. Regulators do not attempt to hold long-distance prices artificially high in order to underprice local services. Depreciation policies ensure that the book value of plant approximates its economic value.

Traditional policies to promote inefficient pricing have long outlived their usefulness. They will become increasingly counter-productive, as competition intensifies.

4. Regulated firms have substantial flexibility to set individual prices, subject to a few overall constraints. Price-cap constraints limit the overall level of prices.

This policy improves efficiency, since the firm understands its costs and demands better than regulators do.

Policymakers must start now to implement these policies over the next few years if the United States is to be well-positioned to lead the world into the Information Age. If policymakers delay even a few years in getting started — and then face lengthy procedural delays — the required changes will involve substantial dislocations. Unnecessary costs will be incurred, and the nation's technological progress will be retarded.

B. Transitional Issues

A transition may be required to eliminate, to the extent possible, regulatory policies that promote inefficient pricing. A mechanism should be established to avoid encouraging inefficient competitors to enter the market, solely because regulators set prices above costs (in order to underprice other services).

Regulators should phase out inefficient pricing policies which now impede progress. Regulators should also implement mechanisms under which competitors, as well as the incumbent, pay contribution charges to support the remaining inefficient regulatory pricing policies. Admittedly, such mechanisms are inherently difficult to administer effectively and the difficulties increase as competition intensifies. The long-term goal should be to phase out, to the extent possible, the regulatory policies that promote inefficient pricing, so that these mechanisms become unnecessary.

II. ASSESSMENT OF COMPETITION

This section assesses the status and trends of competition facing LECs. The assessment provides essential background for the discussion of regulatory issues in subsequent sections.

LECs already face some competition now. In some areas, competition is quite intense now and in a number of other, areas competition is growing rapidly.⁷ During the next 10 years, competition in local exchange markets will likely far outpace the early growth of long-distance competition. Not only are regulatory barriers to entry being removed at Federal and state levels, but regulators are also (unwisely) handicapping LECs by limiting their ability to respond to competition.⁸ Federal legislation preempting state regulation of competitive entry (e.g., the Inouye-Danforth bill) would further stimulate the growth of competition.

The primary competitors to LECs in the near future will be competing access providers (CAPs), cable companies, wireless carriers, and interexchange carriers.⁹ This section discusses the current status and growth potential of each of these forms of competition.

A. Competing Access Providers

CAPs bypass the traditional LECs by connecting privately-operated facilities directly to long-distance carriers. They generally target the larger customers in concentrated areas,

⁷For example, according to a recent NYNEX filing, there are currently 18 carriers certified to compete with NYNEX-New York for the provision of local service. See NYNEX Universal Service Preservation Plan, filed with the FCC, December 15, 1993.

⁸A good example is the FCC's prohibiting LECs from offering volume and term discounts until competitors reach a certain size (Federal Communications Commission, *Second Report and Order and Third Notice of Proposed Rulemaking, In the Matter of Expanded Interconnection with Local Telephone Company Facilities, Amendment of Part 36 of the Commission's Rules and Establishment of a Joint Board*, CC Docket No. 91-141, Transport Phase I and CC Docket No. 80-286, 8 FCC Rcd 7374, adopted August 3, 1993, released September 2, 1993, ¶118).

⁹LECs face additional potential competition from other sources. For example, power companies have already installed large amounts of fiber-optic cable and could use that cable to compete with LECs. Large users (e.g., state governments) can provide many local telecommunications services for themselves.

such as densely-populated metropolitan areas, which will provide the most traffic and a higher return on network investment. Recent surveys indicate that 62 percent of larger business customers use CAPs for at least some access service.¹⁰ CAPs also offer private line and specialized services, such as videoconferencing and network monitoring.

Although a fairly recent development, the CAP industry has been expanding its networks and laying new fiber very rapidly. A year ago, CAPs already were providing alternative access service in about 50 major metropolitan areas.¹¹ In addition to the large CAPs such as Metropolitan Fiber System (MFS) and Teleport, a number of cable firms are entering the local exchange market through subsidiary entities operating as CAPs.¹² LECs themselves are poised to compete with each other, as evidenced by the recent spate of proposed mergers and other joint arrangements between LECs and cable companies; e.g., Bell Atlantic-Tele-Communications Inc. (TCI), Southwestern Bell-Cox and U S West-Time Warner.

CAPs currently primarily provide special access and private line services. New mandatory interconnection rules, by affording access to LEC facilities, will help CAPs expand into the switched access and local service markets. The FCC recently adopted rules on expanded interconnection for switched transport services.¹³ These rules resemble those previously adopted for special access services. The rules require LECs to allow third parties to interconnect their transport facilities at LEC central offices, serving wire centers, tandem switches and certain "remote nodes." Competing local service providers are to be offered interconnect facilities to a LEC central office on the same terms as the LEC itself. They are also to be offered LEC switching functions on an unbundled basis. A competitor will thereby

¹⁰Pacific Telesis *ex parte*, Docket Numbers 91-141 and 91-213 (FCC Apr. 29, 1992).

¹¹J. Kraushaar, FCC Industry Analysis Division, "Fiber Deployment Update End of Year 1992."

¹²Cable ownership of CAPs is discussed further in the next subsection.

¹³FCC, *Second Report and Order and Third Notice of Proposed Rulemaking, In the Matter of Expanded Interconnection with Local Telephone Company Facilities, Amendment of Part 36 of the Commission's Rules and Establishment of a Joint Board*, CC Docket No. 91-141, Transport Phase I and CC Docket No. 80-286, adopted August 3, 1993, released September 2, 1993.

be able to combine its facilities and services with those of the LEC. It can then offer switched access and local exchange service.¹⁴

Interexchange carriers can also collocate and provide transport for themselves. Indeed, any sizable interexchange carriers could economically do so if it found the LEC's price to be excessive or the LEC's service to be unsatisfactory. In this regard, MCI recently announced its intention to enter the access markets as a CAP. The subsequent decline in prices of common stocks in LEC holding companies attests to the seriousness of this competitive threat.¹⁵ In general, buyers wield significant countervailing power in the transport market.

B. Cable

Cable has an ever-growing presence in the residential market. Currently, over 95 percent of television households are passed by cable. The cable penetration rate has grown from 46 percent in 1985 to over 60 percent currently. Subscribers now total 58 million households, and that number is expected to grow substantially in the next decade.¹⁶

Although traditionally providers of one-way video services, cable firms are already preparing their networks to provide telephone service to residents. Installation of fiber, in addition to improving cable service, provides additional transmission capacity to allow cable companies to provide competing switched access and local exchange service at low incremental cost. Cable is replacing traditional network configurations with "star" configurations that use fiber to connect cable head-ends to a neighborhood node.¹⁷ Such configurations, by limiting the traffic coming into each node, are more readily adaptable to interactive applications. The feasibility of interactive cable is proven with operation in many U.S. test markets, as well as in Canada and the United Kingdom. Cable firms may compete either by providing

¹⁴Some states have gone even farther than the FCC. For example, the New York Public Service Commission has afforded LEC status to CAPs.

¹⁵Jonathan Weber and Leslie Helm, "MCI Vows to Fight for Local Phone Business," *Los Angeles Times*, January 5, 1994, p. 1A.

¹⁶Based on figures provided by the National Cable Television Association (NCTA). Current subscribership figure reflects July 1993.

¹⁷G. Gilder, "Cable's Secret Weapon," *Forbes*, April 13, 1992, pp. 80-81.

local-exchange service directly or by leasing distribution facilities to other local service providers.

The proposed merger between Bell Atlantic-TCI and the joint arrangements between Southwestern Bell-Cox and U S West-Time Warner attest to the synergy between the cable and local-exchange industries.¹⁸ The above firms envision that cable systems will provide switched video services (video on demand), as well as telephone services, outside the LEC's serving area. In addition, Bell Atlantic recently obtained court permission to provide cable service inside its serving area.

Even before the above-cited merger and joint arrangements, cable firms evidenced interest in the local exchange market. TCI has announced plans to spend \$1.9 billion to build fiber optic hubs that will link its cable television systems and to deploy fiber optics from the headend to the neighborhood level.¹⁹ First Pacific Networks, Inc. announced the FPN1000 Cable Telephone System this June. This system will allow cable network operators to deliver switched voice to the home over existing cable plant.²⁰ Time Warner agreed to test FPN's digital system, which would provide alternative access over Time Warner's Queens, New York cable system. In June, Time Warner Inc.'s cable television unit said it was seeking regulatory approval to offer telecommunications services in San Diego.²¹

Cable, which reaches residential customers, and CAPs, which reach business customers, are realizing a synergy through corporate integration and network alliances. In fact, cable interests currently control over half of CAP revenues.²² The FCC has ruled that

¹⁸Partners in the Bell Atlantic-TCI deal characterize the proposed merger as a "'procompetitive' combination that could let TCI offer telephone service in competition with other Baby Bells" [*The Wall Street Journal*, October 14, 1993, p. A7 (column 1)].

¹⁹"TCI Launches Four-Year, \$1.9 Billion Fiber Deployment Plan," *Telecommunications Reports* (April 19, 1993), p.4.

²⁰"FPN1000 Delivers Cost-Effective Telephony over Cable," press release from First Pacific Networks, June 7, 1991.

²¹"Time Warner, Baby Bell May Compete in San Diego," *The Wall Street Journal*, June 24, 1993, p. B7.

²²See Peter W. Huber, Michael K. Kellogg and John Thorne, *The Geodesic Network II: 1993 Report on Competition in the Telephone Industry* (Washington, D.C.: The Geodesic Company, 1992), pp. 2.60-2.61. TCI and Cox hold interests in Teleport, Adelphia Cable in Hyperion Telecommunications, American Cablevision in Hyperion Telecommunications, and Time Warner in Fibernet, Inc. Jones Intercable is a sister company of Jones Lightwave.

cable company ownership of CAPs does not violate the cross-ownership ban because of the nondominance of CAPs.²³ Cable companies have also evidenced active interest in wireless service, as discussed in the next subsection.

C. Wireless Competition

The wireless communications industry has burgeoned in recent years. Cellular service was originally provided via mobile phones, installed in cars. Mobile phones are still widely used, but customers are increasingly using small handheld portable phones. With portable phones, users can make or receive calls anywhere — so long as cellular service is available in the area.

Use of cellular has increased dramatically in recent years, with a 46 percent increase in 1992 alone.²⁴ Deployment of digital technology will improve transmission quality and allow cellular systems to carry many times the calls that they can carry today. This will lower unit costs and alleviate the capacity constraints that have hindered cellular's ability to compete with LECs. Cellular may provide switched access and local exchange service in combination with cable; TCI is reported to be conducting joint trials of combined cable and cellular service with McCaw Cellular.

On September 23, 1993, the FCC made an historic decision, allocating 160 MHz to personal communications systems (PCS). This allocation represents roughly a four-fold increase in the spectrum available for wireless telephony.

The regulatory process to distribute the spectrum to providers of PCS is well advanced. It is moving ahead on an expedited schedule, mandated by Congress. It now appears that PCS may actually be deployed by 1996, or even earlier.

²³Approving the transfer of microwave licenses necessary for Cox Cable's acquisition of 50.1 percent of Teleport's shares, the FCC ruled 5-0 that cable television companies are permitted to provide telephone services. "FCC Finds Transfer of Three Microwave Radio Stations from Merrill Lynch Group to Cox Teleport Consistent with Telco-Cable Cross-Ownership Rules, *FCC News*, August 5, 1992 (CC-463).

²⁴"Cellular Industry Sees 46% Subscriber Increase in 1992," *Telecommunications Reports* (March 8, 1993), p. 24.

The vast increase in capacity of wireless telephony (both from deployment of digital technology and from PCS) is sure to drive down prices. Cost reductions will lead to further price declines. As a result, the already rapid growth of wireless telecommunications will accelerate. Within a few years after the deployment of PCS, we expect that a large fraction of U.S. households and businesses will use wireless services for part of their telecommunications needs. Wireless telecommunications will become an ever more important part of the nation's telecommunications infrastructure.

Cellular will face some additional competition, even before PCS is deployed; *e.g.*, through use of specialized mobile radio service (SMRS) spectrum.²⁵ Consequently, the softening of cellular prices and the resultant acceleration of growth of wireless services may begin even before 1996. PCS will, like cellular, be targeted at customers who value portability. However, as prices of wireless services decline, the premium that must be paid for portability will probably be much lower than today. When that happens, wireless telephony will provide substantial competition to landline LECs. If LECs charge too much for wireline services or provide poor service, customers will be able to switch to wireless telephony.

Providers of wireless service can easily connect directly to interexchange carriers and bypass the LEC. Consequently, LECs will progressively lose access revenues, as the wireless industry grows during the next decade. Indeed, as prices of wireless service fall, the profits from bypass will be an increasingly important source of funds for the wireless industry. AT&T's recent acquisition of McCaw and MCI's apparent interest in obtaining a national PCS license attest to the nexus between cellular service and long-distance service.

Wireless service can also be used to supplement wireline services provided by CAPs. Cable companies and local fiber-based CAPs can provide telephone service at low marginal cost, where their networks are in place. They can use wireless technology to expand their area of coverage and to accommodate customers who value portability. Cable companies are actively pursuing this concept, in addition to acquiring fiber-based CAPs. Indeed, cable

²⁵Recent transactions (*e.g.*, between Motorola and Nextel) facilitate the efficient repackaging of SMRS spectrum so as to be more competitive with cellular.